OTTAWA
PC NEWS

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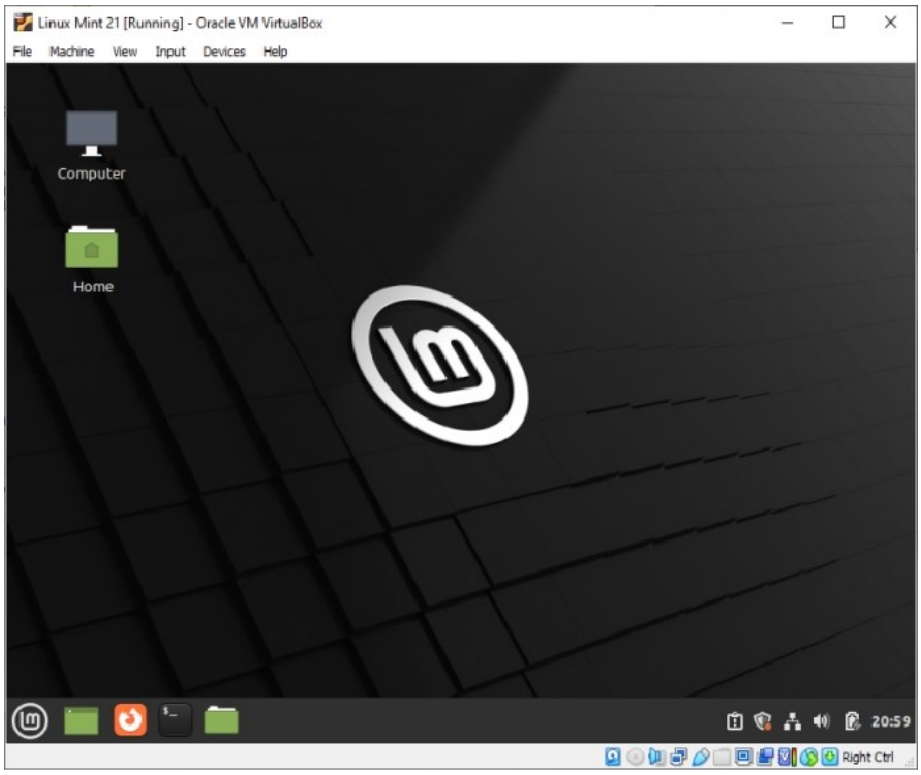
ARTICLE

Exploring Linux – Part 30: Three Ways to Try Linux – VirtualBox Configuration

by Alan German

In the previous article in this series we created a virtual machine (VM) running Linux Mint 21 Cinnamon Edition using VirtualBox in Windows 10. The program window is shown in the screenshot. The Mint desktop, with a black background, should look familiar since it is almost the same as when we ran Mint as a live-USB. The exception is the *Install Linux Mint* icon which is no longer visible as we have now installed Mint as the operating system for our VM.



Note also the *File-Machine-View* menu at the top of the program window providing access to a number of VirtualBox's features. Similarly, several icons are located at the bottom of the program window. These provide controls and/or status indicators for various devices such as the sound system, USB connections, and the mouse.

One thing that those who are running their computer on a Wi-Fi connection might have noticed when the VM booted up was a *Connection Established* pop-up message that indicated *You are now connected to "Wired connection 1"*. Despite the wording, the VM is not connected using an Ethernet cable. VirtualBox has established a virtual network card that provides a connection to the host (Windows 10) machine's Internet service. The default connection should be adequate for most users but VirtualBox has considerable flexibility in how networking can be configured should this not be the case.

When searching for information on how to use the features in VirtualBox, the terms host and guest machine will often be encountered. In our present case, Windows 10 is the host machine. It is running Virtual-

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Inside this issue:

Next Meeting: WEDNESDAY, May 10th, 2023

Next Meeting

Wednesday, May 10th, 2023

Members' Favourites Night

Speakers (to date):
Chris Taylor (Microsoft Quick Assist)
Tom Trottier (PortableApps.com - make a USB with your apps and data to use on any windows machine

It's everyone's favourite night! Yes, we have scheduled a Members' Favourites Night for **May 10th** and are looking for speakers.

If you want to give a presentation, send an email to SuggestionBox@opcug.ca.

Consider your topic of choice, sharpen your thesis on the issues involved, and start creating your presentation today.

This meeting will be via Zoom video conference.

Join us at **https://tinyurl.com/opcug-meeting**. The Zoom link will be live at 7:15 pm. The meeting will begin at 7:30 pm.

The above link includes the meeting ID and password. However, if you are prompted for the information, use:

Meeting ID: **924 9556 0898**
Password: **opcug**

Coming Up…

June 14
Annual Pizza Night
Registration is required (*see article on p. 6)*

September 13
Directory Opus: the Ultimate Windows Explorer Replacement
Speaker: Serge-Érik Thériault (OPCUG)

October 11
Self-driving cars *(details to follow)*
Speaker: Bob Walker (OPCUG)

November 8
Celestial Shadows – Eclipses of the Sun and Moon
Speaker: Howard Simkover

All scheduled regular monthly meetings, weekly Q&A sessions, and a link to OPCUG presentations at the OPL are posted on our website at https://opcug.ca/#upcoming. All events are via video conference until further notice.

2023 CALENDAR

Meetings	Date	Time and Venue
Regular Monthly Meeting	Wednesday, May 10th	7:30 pm via Zoom video conference: **https://tinyurl.com/opcug-meeting** To see all scheduled events, visit https://opcug.ca/#upcoming
Next Q&A Session	Wednesday, April 26th	Until further notice, Q&A sessions are no longer held after regular monthly meetings. Join us on all other Wednesdays for weekly Q&A.
Beer BOF (Wing SIG East)	Wednesday, May 10th	Enjoy a cold brew or other beverage in the comfort of your home during the video conference.

PRODUCT REVIEW

Rescuezilla – A Flexible Backup Solution

by Alan German

For several years my disk imaging backup program of choice has been Macrium Reflect Free Edition; however, recently, Macrium's developers announced that the free version is to be discontinued. Security updates will be provided until January 1, 2024 after which, although the program can still be used, no new features or support will be provided. Consequently, this seems to be a good time to seek out an alternative backup solution for the long term.

The other aspect of this issue is my growing preference for Linux over Windows, especially given that none of my computers will support Windows 11, and the end-of-life date for Windows 10 is October, 2025. However, my previous experiences with disk imaging programs for Linux have found these lacking the flexibility and ease of use offered by their Windows counterparts.

For example, Clonezilla has an old-style, text-based interface that is somewhat complex and difficult to navigate. The program can create a backup using either its *savedisk* or *saveparts* feature. *Savedisk* allows the entire disk to be restored but will not restore single partitions. In contrast, *saveparts* will restore one or more partitions but will not restore the master boot record or the partition table and so can't be use to restore the entire disk. Clearly, this is not very helpful when it comes to flexibility in restoring disks and/or partitions.

But now, there is a new kid on the block – *Rescuezilla* – that offers a user-friendly, graphical user interface, clearly-defined icons and menus for specific tasks, and the flexibility to save and restore both disks and partitions.

Rescuezilla can be downloaded as an ISO file (the current version is *rescuezilla-2.4.1-64bit.jammy.iso*) that can be used to create a bootable USB flash drive. As the "jammy" portion of the file name indicates, the USB boots into a version of Ubuntu Linux; however, this operating system is initially hidden from the end user as Rescuezilla loads in full-screen mode.

The main menu provides *Backup* and *Restore* options, in addition to icons for *Clone*, *Verify Image*, and *Image Explorer*. The latter option is a work in progress and is intended to allow mounting a disk partition directly from the backup image in order to extract individual files and folders. However, for our present purposes we will just consider the main two options for *Backup* and *Restore*.

Selecting *Backup* launches a wizard that steps through the required process. Firstly the source drive that is to be backed up is selected from a menu of available disks. *Back* and *Next* buttons on the individual screens allow easy navigation. The subsequent screen, *Step 2: Select Partitions to Save*, allows selection of the partitions that are to be included in the backup. Windows users should note that, since we are using a Linux system, no drive letters are used. Rather, the partitions are listed with drive and partition numbers, the size of the drive, the file system, and any partition label.

If not all the partitions are to be backed up (or restored), it's clearly important to be able to identify the desired partition using the information that is displayed. For example, the screenshot shows the partitions for a disk that dual boots Windows 10 and Linux. The Windows partition (Drive C:), Partition 5, is labeled as Windows 10 while the Linux partition, Partition 9, is using the ext4 file system.

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THROUGH THE LENS

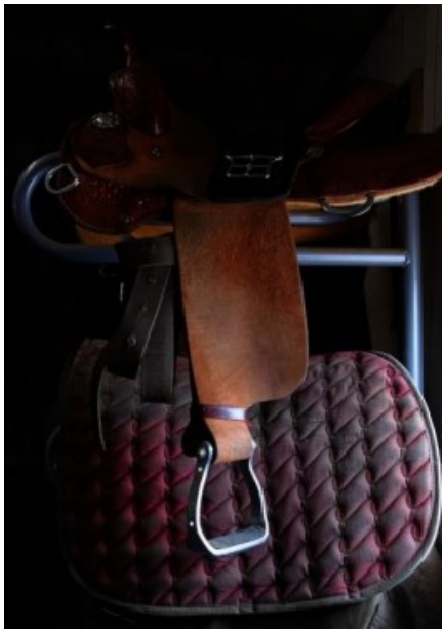
A guide to digital photography for computer enthusiasts. After the click of your camera, you're only half done!

High/low key

by Lynda Buske

Whether intentionally or by mistake, sometimes our images come out a little too dark or a little too light in certain sections. If you notice this on your camera's playback screen and you don't wish to have this effect, you can raise or lower the exposure via the EV (+/-) adjust button (https://opcug.ca/Photography/GettingOffAuto.pdf) and retake the photo. Or you can also adjust the exposure in certain areas of an image in post processing on your desktop with free editing software. (https://opcug.ca/Photography/UsingMasksInPhotoEditingSoftware.pdf)

If, however, you do want a high/low key image, you can set your EV adjust accordingly. For a high-key image, try setting it between +1 and +2 and check the effect. If you want a low-key pic, set it between -1 and -2. If your camera allows, you can go beyond +/- 2. This feature is even commonly available when shooting with cell phones.



There are certain characteristics typical in high/low key images. Typically, low-key photographs are underlit and feature contrast and dark areas. The photographer may wish to light only specific areas in the frame. A low-key image can add mystery or suggest a dark/serious mood.

High-key images are the exact opposite of low-key ones. The photographer may want to purposely over expose certain areas of a scene. High-key images are unusually bright with little or no dark shadows present. They can create an ethereal mood or a positive/upbeat look. With a young child, it can suggest innocence and purity because of the large areas of white.

♦♦♦

This article is also in PDF format on the OPCUG website (https://opcug.ca/digital-photography/).

Linux *(Continued from page 1)*

Box which, in turn, is running the virtual machine. This virtual machine is the guest machine and is running Linux Mint. Note that these definitions could easily be reversed had we installed VirtualBox on a Linux computer and created a Windows 10 virtual machine.

Now that we have our VM running, most users will probably want to make the window bigger. If you grabbed a corner of the window and dragged it across the screen, you would have found that the VirtualBox window did increase in size but this did not change the size of Mint's desktop. Instead, navigate to *View - Scaled Mode* in VirtualBox's menu bar and select *Switch*. Now the VM's window can be made larger. Note that this process removes the menu bar from the top and the status/control items from the bottom of the window. The previous view can be restored by pressing *Right-Ctrl-C*.

You may recall that as part of the creation process for our Linux VM we opted to create a virtual disk with a size of 25 GB and used this disk to install the Linux operating system. The OS and the applications included with the distro have only used part of the virtual disk's storage. Furthermore, the virtual disk is part of our virtual machine and, as such, its contents are stored on the Windows 10 machine's hard drive as part of the VM software. The net result is that we now have free disk space that we can use to store files or install additional applications. Note that this is in contrast to our previous use of a live-USB where no such disk space was directly available to the Linux system.

We can also access storage on a USB flash drive that is plugged into a port of the Windows 10 computer. If we navigate to *Devices – USB* in the VirtualBox menu, a list of available USB devices will be displayed. In my specific case, there is an entry for *UFD 3.0 Silicon-Power 16GB [0100]* that provides access to this external USB drive. Clicking on this entry results in an icon for a USB drive, labelled SILICON16GB, being displayed on the desktop. In addition, the Nemo file manager is launched and shows the drive's contents. However, note that activating the USB drive for use in the VM removes the capability to access the same drive in Windows. So, take care to safely eject (right-click on the drive and select *Eject*) to release the drive from the VM. Note also that it will be necessary to remove the flash drive from the computer and plug it back in before it can once again be accessed in Windows.

Obviously, we can use the USB drive to transfer files from the VM to the host computer (and vice-versa). However, this isn't all that convenient because the connection isn't available on both machines at the same time. Fortunately, there are other means for file and data transfer. We can use copy-and-paste to either transfer text to and from the clipboard, or move files directly between the host and the VM. In addition, we can establish a shared folder whereby the VM can read and write files in a folder on the Windows machine.

To establish the text/file copy functions, navigate to *Machine – Settings – General – Advanced* and change *Shared Clipboard* and *Drag'n'Drop* from *Disabled* to *Bidirectional*. However, this produced the first glitch in the VM process since when I tried cutting and pasting text between *NotePad++* in Windows and the *xed* text editor (*Menu - Accessories – Text Editor*) on the virtual machine, no text was transferred.

The cause for this was tracked down to *Guest Additions* not having been installed despite having checked the box for this when the VM was created. This is simply rectified by navigating to *Devices – Insert Guest Additions CD Image*. Note that there is no need to go looking for a CD nor an image file; the CD image is already present in the installed files for VirtualBox. The menu entry results in an icon labelled *VBox_Gas_7.0.4* being displayed on the VM's desktop and a dialogue box asking if software (autorun.sh) on the CD image should be allowed to run. Click the *Run* button, and enter your Linux password, in order to install *Guest Additions*. The installation modifies some parts of the Linux kernel and a final message indicates that these changes will only be activated when the VM is restarted. So, after closing the installation window, navigate to *Menu – Quit – Restart*.

With the VM restarted, and since we have no further use for the CD image, right-click on the *VBox_Gas_7.0.4* icon and select *Eject* to remove the icon from the desktop. Now, before we can test our options for cut-and-past and drag-and-drop, we need to reset the settings for *Shared Clipboard* and *Drag'n'Drop* in *Machine – Settings – General – Advanced* to *Bidirectional*.

Now, we can open the Linux text editor by navigating to *Menu - Accessories – Text Editor*. Type "The quick brown fox" and save this in a file named fox.txt (*File – Save-As – fox.txt*). Note that, by default, the file is stored in the *Home* directory. Now, highlight the text in the editor's window and press *Ctrl-C* to copy the text to the clipboard. Open *Notepad++* (or Windows Notepad) and press *Ctrl-V* (Paste) and see that the text about our fox is indeed inserted into a blank document. Type a new line as "jumped over the lazy dog." And copy-and-paste this from *NotePad++* to *fox.txt* which remains open in the Linux text editor. Save the file and close the text editor.

Now, let's try drag-and-drop. Open *File Explorer* in Windows. Now, double-click on the *Home* icon on the desktop. Scroll down in order to select the file *fox.txt,* and drag this over to *File Explorer* on the Windows' machine. Double-clicking on this file will display the well-known text in

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PIZZA TIME! Wednesday, June 14, 6 PM

Once again we are fast approaching the end of our OPCUG season, and once again we'll celebrate it with pizza, drinks and desserts. These are free for OPCUG members and their guests. This year we'll even have door prizes for our members.

The event will be, as always, on the second Wednesday of June, that is June 14, 2023, starting at 6 PM. It will be at the **Britannia Park Trolley/Picnic Station** (see images below), under a sheltered area in case the weather does not cooperate, with free parking and bathroom access. For those who would like to bring beer or wine, **alcohol is not permitted** in the park. Pop and water will be provided.

To help with planning, we're asking you to **register by email** to **pizzaparty@opcug.ca**. Tell us if you are bringing guests and how many, if you require special pizza accommodations (e.g. gluten-free, vegetarian), and if you need a ride or can offer a ride.

We look forward to seeing you all in great numbers!

Britannia Park Trolley/Picnic Station
(click image for more photos)

Sky view of Trolley/Picnic Station and parking
(click image to view larger)

Map to Britannia Park
(click image to go to Google Maps)

Linux *(Continued from previous page)*

Notepad++. Check that a file can be dragged from the Windows machine to the desktop or to a folder on the VM.

The final method of transferring information between the host and guest machines will be via a shared folder. Note that we have established that *Guest Additions* is installed correctly on our VM which is a requirement for the shared-folder function.

To activate a shared folder, navigate to *Devices – Shared Folders - Shared Folder Settings*. On the upper-right side of the pop-up window, click on the icon that displays a blue folder with a plus sign (*Adds new shared folder*). In the pop-up dialogue box, browse for a Windows folder using the drop-down menu in *Folder Path* (select *Other* then, for example, *D:\transfer*). By default, the Folder Name will be set to (in my case) *transfer*; however, this can be changed to anything you wish (e.g. *VboxTransfer*). Leave *Mount Point* blank, and check the two boxes labelled *Auto-mount* and *Make Permanent*. Press OK to close the Shared Folder window and an icon labelled sf_VboxTransfer will be displayed on the VM's desktop.

Double-clicking on this icon brings up a dialogue box indicating that the folder contents cannot be displayed because you, as the current Linux user, do not have the requisite permissions to view the folder. To facilitate access to the shared folder, we need to add our user to the Linux *vboxsf* group. Navigate to *Menu – Administration – Users and Groups* and enter the Linux password to authenticate the request. Click on the icon for your user (*Alan* in my case), and then, in the box containing the list of groups to which the user is subscribed, scroll down, check the box labelled *vboxsf*, press OK, and close the Users and Groups window.

It is necessary to restart the VM in order for the changes to be activated; however, once this has been done, double-clicking on the *sf_VboxTransfer* icon displays the files that are stored in the Windows folder. Files in this folder can now be added, edited, and deleted from either the Windows host machine or the Linux VM and this provides a very convenient method of sharing information between the two systems.

We now have the Linux VM configured to be useful for trying out Linux while still being able to exchange material with our Windows machine. Next, we are going to see how the use of Linux on a virtual machine differs from that on the live-USB version we had previously.

Bottom Line

VirtualBox (Freeware)
Oracle Corporation
Version 7.0
https://www.virtualbox.org

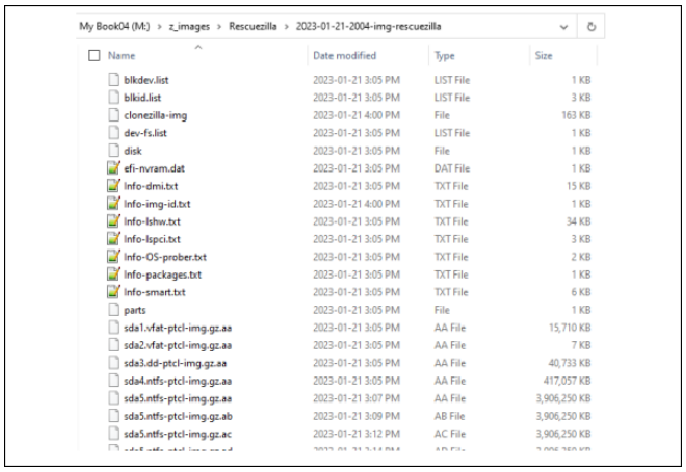
Rescuezilla *(Continued from page 3)*

By default, all of the available partitions are checked and so, to make a full disk image backup, we just have to press the *Next* button. The subsequent screen allows selection of the destination drive on which the disk image is to be stored. This is followed by a similar screen that selects a folder on the destination drive as the storage location. Once again, a Linux protocol specifies a mount point as */mnt/backup*. This can be refined by using the *Browse* button to point to a specific folder on the destination drive, e.g. */mnt/backup/z_images/Rescuezilla*.

The next screen provides a default name for the backup image (e.g. *2023-01-21-2004-img-rescuezilla*), allows this name to be customized, and displays an option to include descriptive text. This is followed by a screen on which the compression algorithm and level can be specified. These can readily be left at their default settings of gzip and 6, respectively.

The final screen provides a summary of settings selected, including the source drive and the partitions to be backed up. Clicking on *Next* starts the backup process which then runs unattended.

The resulting image takes the form of a folder with multiple files that are clearly a mix of administrative information and segments of compressed partitions (e.g. sda5.ntfs-ptcl-img.gz.aa, …gz.ab, …gz.ac). In my baseline test, the overall file compression was approximately 60%.



Restoring from a backup image is essentially the reverse of the backup process. The image file on the backup disk is identified; the partition(s) to be restored, and the disk on which the partition(s) is to be restored, are selected. I tried a number of restorations, including just my dedicated data drive which I could verify against a file-by-file backup stored on a USB flash drive. I also restored the Linux operating system partition and swap area (Partitions 9 and 10), and the entire drive. In each of the latter cases, success was confirmed by the fact that the disk subsequently booted normally into both Linux and Windows via the GRUB boot menu.

For me, these tests have confirmed that *Rescuezilla* is a viable backup-restore solution for my system. For Linux users, the processes and nomenclature will be straightforward. Windows users will perhaps need to pay attention to the listings of disks, partitions, and folders as the designations (e.g. mount points) are quite different between Linux and Windows. However, that being said, the fact that *Rescuezilla* functions as a live-USB provides a ready-made backup option for both operating systems, and can be used even if the PC refuses to boot normally from the hard drive.

Bottom Line

Rescuezilla (Open source)
Version 2.4.1
https://rescuezilla.com

Quick Tip 53: Adjusting the volume control

by Chris Taylor

There is little (nothing?) I find compelling enough in Windows 11 to make me upgrade from Windows 10… yet. In fact, in many cases, Microsoft took away functionality that existed in Windows 10.

So it was with adjusting volume. In Windows 10, you can click the *Volume* icon in the system tray (1 below) and then use the scroll wheel on the mouse to adjust the volume. Of course, you can also drag the slider (2 below), but I find using the scroll wheel faster.

When Windows 11 was ~~foisted on us~~ introduced you couldn't use the scroll wheel to adjust the volume. You had to click the *Volume* icon and then drag the slider.

Beginning in Windows 11 build 22478 (released in October, 2021), Microsoft actually made things a little better than Windows 10. You can simply hover the mouse over the *Volume* icon in the system tray and use the scroll wheel. No need to click the icon. A small improvement, but at least it is an actual improvement.

By the way, if you are a Linux user, you already have this functionality!

OTTAWA PC NEWS

Ottawa PC News is the newsletter of the Ottawa PC Users' Group (OPCUG), and is published monthly except in July and August. The opinions expressed in this newsletter may not necessarily represent the views of the club or its members.

Member participation is encouraged. If you would like to contribute an article to Ottawa PC News, please submit it to the newsletter editor (contact info below). Deadline for submissions is three Sundays before the next General Meeting.

To receive the monthly newsletter by email, send an email to:
opcug-newsletter+subscribe@googlegroups.com (leave subject and body fields blank)
You do **not** need to create a Gmail or Google Groups account.

To subscribe to other OPCUG Google Groups member services, go to:
https://opcug.ca/google-groups-how-to/

Group Meetings

OPCUG meets on the second Wednesday in the month, except July and August, at the Riverside United Church, 3191 Riverside Drive, Ottawa. Parking is free at the church. OCTranspo bus #90 stops nearby. Details at https://opcug.ca/venue/.
(NOTE: Due to COVID-19 safety guidelines, all our events are via video conference until further notice. Details at https://opcug.ca/venue/)

Meetings are 7:30–9:00 p.m. followed by a Q&A Session until 10 p.m.

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Karen Wallace-Graner	**karenwg@opcug.ca**	

Q&A HAS GONE ON-LINE! WEEKLY!

Because of the pandemic, the OPCUG is holding weekly Q&A sessions in Zoom video-conferences.

Join us every Wednesday (except on regular monthly meeting nights) at 7:30 pm to discuss computer issues. Questions (and answers) on any computer-related issue are welcome. Or, do you have a favourite computer program or topic that you would like to share with the group? Send your questions, answers, or the details of what you would like to share to: SuggestionBox@opcug.ca

Everyone is welcome to attend Q&A sessions and to ask questions about their specific computer-related problems. Join us at: https://tinyurl.com/opcug-meeting (if you use the Zoom client, the meeting ID is **924 9556 0898** and the password is **opcug**).